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## ABSTRACT

The process of creating and maintaining a World Wide Web homepage for a national organization--the Association of Collegiate Business Schools and Programs (ACBSP)--is detailed in this paper. The logical design confines the conceptual relationships among the components of the Web pages and their hyperlinks, whereas the physical design concerns where the content is stored, or, on what computers the files reside. The website for the ACBSP is actually a triad made up of the ACBSP national homepage, the eight regional homepages, and the central database of member institutions. The ACBSP homepage functions as the organization's hierarchical top level or as a logical main menu of choices, which branches to various sub-levels. This is linked to a regional main menu, which offers links to regional homepages and member institutions by state. The region pages also offer a branch to an expanded region website. This distributed file serving environment allows for a high degree of flexibility. At the activation of a "Send Form" button, data is passed to a server-based Common Gateway Interface (CGI) program as a parameter list. CGI makes it possible for a browser user to initiate and pass information to server-based programs; in addition, users can receive information back in the form of a dynamically created Web page. CGI programs implement Web-based applications with a minimum of expense. Marketing efforts to current and prospective ACBSP members and intra-organizational communication via e-mail and hyperlinks have been accomplished. (AEF)

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## An Administrative Model for Virtual Website Hosting

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### Abstract

The process of creating and maintaining a World Wide Web homepage for a national organization - the Association of Collegiate Business Schools and Programs (ACBSP) is detailed. Iterations of the website's logical and physical design are discussed, as well as a variety of administrative issues. The growth and change from a file processing environment to a database environment is explained.

Marketing efforts to current and prospective ACBSP members and intra-organizational communication via e-mail and hyperlinks have been accomplished. The long-term goals of electronic dissemination of research and curriculum collaboration are on the horizon.

### Introduction

Accreditation is a formal process which ensures public confidence in school programs. In the United States, institutions voluntarily seek accreditation which is conferred by nongovernmental bodies. The Association of Collegiate Business Schools and Programs (ACBSP) is an accrediting organization which specializes in accrediting business programs within colleges or universities which have already achieved institutional accreditation through regional or national accrediting bodies. Over 200 college and university business programs are ACBSP accredited.

In the spring of 1996, the Board of Directors of ACBSP selected Delta State University (Cleveland, MS) to lead an effort among member institutions to create an ACBSP homepage on the World Wide Web. Presence on the Web now serves several purposes: promotion and marketing of the organization, enhancement of membership development, communication with and among member institutions, and dissemination of timely information. Additionally, when hyperlinks to member institution's homepages are provided, the national membership infrastructure is strengthened.

### History of ACBSP

According to the promotional literature of ACBSP (ACBSP History, 1995), two organizations in the United States accredit business schools and programs in colleges and universities. One, the American Assembly of Collegiate Schools of Business (AACSB), was formed in 1919. AACSB is an accrediting agency for bachelor's, master's and doctoral degree programs in business administration and accounting. The mission of AACSB is the promotion of excellence in

management education in colleges and universities. The second organization is the Association of Collegiate Business Schools and Programs (ACBSP), founded in 1988 as an alternative accrediting agency for business programs that do not have research as a primary emphasis.

Approximately 2400 institutions of higher education have business programs in the five traditional fields of business education—accounting, business administration, economics and finance, management and marketing. Specialized areas of study such as human resources management, management information systems, and public administration are also considered as business-related curricula. In 1988, approximately 260 of the 2400 institutions previously mentioned had their business schools and programs accredited and it was administered by only one organization.

Many of the remaining 2140 institutions felt that an alternative organization should be created to satisfy the business accreditation needs of their institutions. Most of these 2140 institutions had (and still have) as their primary student-oriented objective, excellence in teaching as opposed to a heavy emphasis on research. These institutions expressed dissatisfaction with the existing accreditation philosophy, requirements, and procedures of AACSB. Hence ACBSP, a new accrediting organization for business schools and programs, was created with its primary emphasis directed towards fostering excellence in teaching.

### **Internet/Intranet**

Internationally, business and industry are examining ways to harness the Internet to improve all aspects of marketing (Wilder, 1996). Product promotion, demographic data collection, and customer service are the three most important ways the world wide network will help marketing efforts. The costs for these basic marketing functions are dramatically lower when the costs of paper-based publishing and information dissemination are removed from the equation. These cost saving advantages are perhaps even more impressive for non-profit organizations where budgets are notoriously tight.

Organizations are also adopting the idea of private, company-wide Internet-like computer networks which are referred to as intranets. These internal networks rely on the TCP/IP protocols and have e-mail systems, Web servers and Web browsers. In addition to facilitating information dissemination, intranets offer the opportunity for collaboration. An intranet goes beyond Internet access by offering a concentrated TCP/IP network that is focused on a company's business interests. Intranets are one of the fastest growing concerns in the business world—the Gartner Group expects more than 50 percent of large organizations to have intranets by 1998 (Martin, 1996).

The ACBSP website was first envisioned as a conventional node on the Internet to be used predominately for external marketing and information dissemination. However, as iterations of the original model evolved, attributes of an intranet unfolded. The website is physically housed in one location, on a particular server, and serves primarily as the accrediting organization's homepage. Yet, the links to member institution and affiliated organization websites contribute to a sense of a organization-wide focus.

In addition to ad hoc announcements and ACBSP literature, links to potentially 200 plus institution/business school Web pages allow for electronic dissemination of research, discipline-level sharing, peer communication about course content and curriculum matters, and even project/publication collaboration. Further, an intranet-like membership database is housed in one location reducing data redundancy and preserving data integrity. This type of service is commonly called virtual website hosting.

## Logical/Physical Design

The logical design of a website defines the conceptual relationships among the components of the Web pages and their hyperlinks. In contrast, the physical design is concerned with the actual implementation of the logical design. Logical design entails the organization of material, the user's interface or how one "navigates" the various parts, and how the material is accessed from various locations. The physical design concerns where the content is stored, i.e., on what computers the files reside. In other words, the logical design is concerned with the what, while the physical design is concerned with the how.

### Virtual Web Site

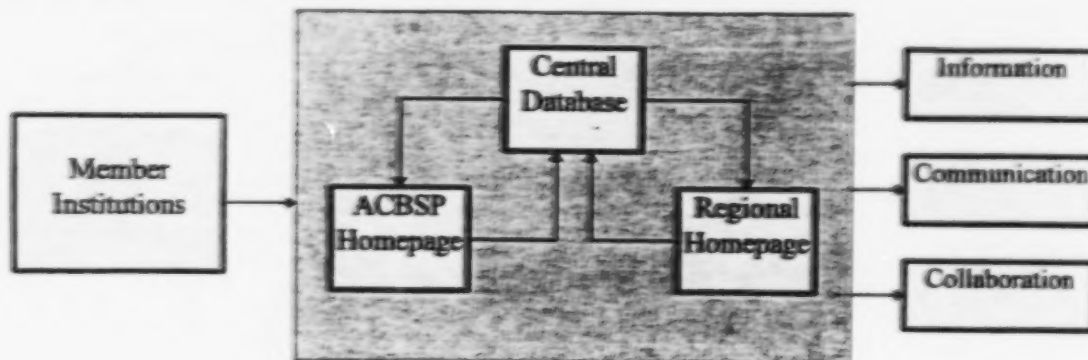


Figure 1

The logical model used for the ACBSP is a hybrid internet website/intranet (Figure 1). The Web pages that reside on the <http://okra.deltast.edu> server appear to a visitor to be the actual ACBSP organization. The website is actually a triad, the three parts being the ACBSP national homepage, the eight regional homepages, and the central database of member institutions.

The ACBSP homepage functions as the organization's hierarchical top level or as a logical main menu of choices. This page branches to various attributes or sub-levels such as the director's welcome, the mission statement, and links to affiliated organizations such as the Institute for Certification of Computer Professionals (ICCP). It contains the logo and has the look and feel of a home base.

The homepage contains a link to a "Regional" main menu which offers links to regional homepages which in turn allow links to member institutions by state. The region pages also offer a branch to an expanded region website. These expanded websites are maintained on different servers located at other institutions which have volunteered to house a regional site.

This distributed file serving environment allows for a higher degree of flexibility. While all of the links within the ACBSP homepage have the same look and feel both visually and navigationally, the designers of the regional pages have been encouraged to "do their own thing." The overall virtual website enjoys the best of both worlds--the consistency of predictable structure within the organization as a whole and more creativity and diversity among the regional membership.

The third aspect of the ACBSP "Intranet" is the central database. Traditionally, two approaches to storing data have been used: the file processing environment and the database environment. On the Web, the file processing environment, where each website has its own

collection of files, is typically seen. This approach is considerably less complex and more easily implemented. However, the twin problems of data redundancy and a lack of data integrity might occur in the file processing environment.

Data redundancy is inefficient as it results in additional storage space requirements. More critically, however, is the potential for data inconsistency. When updates to the data are necessary, all files must be updated universally. For example, if more than one website listed a schedule for an upcoming conference and specific schedule changes occurred, the potential for conflicting information exists. This type of information impacts on data integrity or, simply, lack of quality, reliable information. To ensure data integrity, a single, well-designed database that can be accessed on-line is the best solution. For membership on-line updating, the ACBSP top-level region pages have a link to a form on which users can fill in data fields. When the user activates the "Send Form" button, a CGI program (using UNIX-specific PERL scripting) is run.

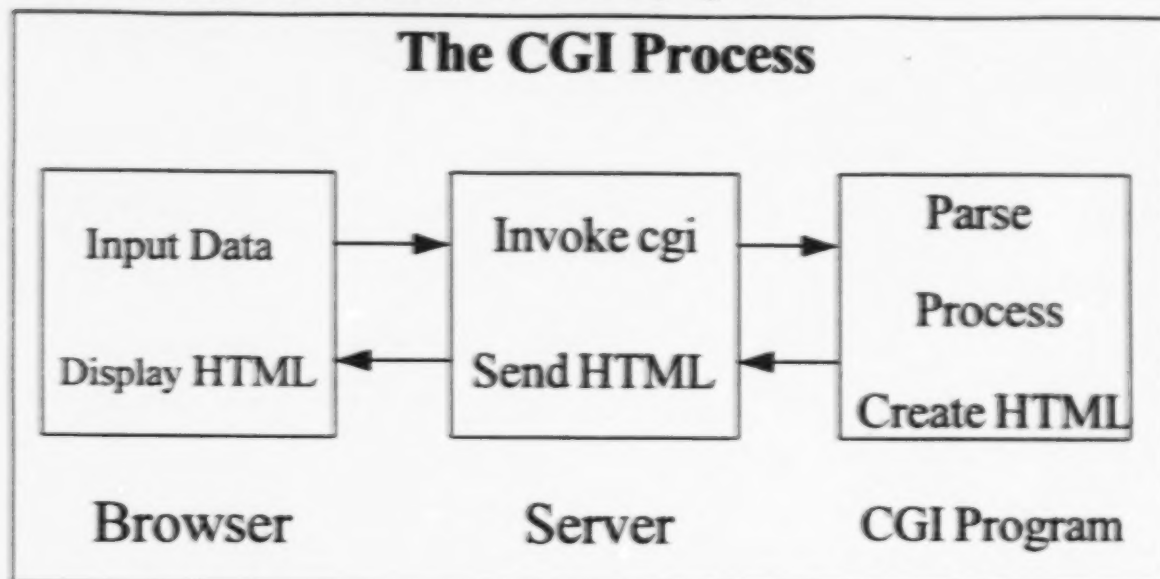


Figure 2

#### Common Gateway Interface

The Common Gateway Interface (CGI) is client/server standard for setting up simple communications between a Web browser and server. CGI makes it possible for a browser user to initiate and pass information to server-based programs. In addition, users can receive information back in the form of a dynamically created Web page. CGI programs make it possible to implement Web-based applications with a minimum of expense. The CGI standard is supported by virtually every Web server and browser, making it possible to bring platform-independent interactive applications to just about anyone with a Web browser.

When an individual completes the form to update the ACBSP member lists and activates the "Send Form" button, the data is passed to a server-based CGI program as a parameter list. The CGI program then performs three tasks: (1) parse the parameter list to separate the data into fields, (2) process the information accordingly, and (3) provide feedback to the user (See Figure 2). The CGI program dynamically creates an HTML page containing a message stating that the request has been

processed successfully. The HTML page is then written to standard output and transmitted to the user's browser.

After CGI processing, data is written to a flat file on the server. Another program appends the data fields to an Access database by way of Open Database Connectivity (ODBC). The Access database in turn has a program module that outputs HTML files which reflect the updated membership information. This Access program runs an FTP script which uploads the updated HTML documents to the server. Therefore, the entire update process is automated.

### What We Learned

The Internet is a communications medium like any other, it's just somewhat more sophisticated. Developing a website for a national organization with a distributed membership is both technically and administratively complex. Technically, such details as the CGI programming and connectivity between the UNIX server and the PC-based database, although straightforward, require considerable expertise. Administratively, several issues require strategic planning and not a little diplomacy.

Communications between the technically-oriented development team (who are volunteer labor) and the organization's decision-makers (who are Internet novices) can be challenging. When trying to coordinate the input of many players, "turf" is a sensitive political issue. A big question for this project concerned deciding who would develop each of the eight regional websites--whether it would be decided on a first-come, first-serve basis or authorization would come through administrative channels.

An initial consideration concerned the number of people to involve in the project. Realizing that a complex project would occasionally be taxing on normal schedules and the fact that long-term maintenance would be involved, the decision was made to recruit several members so no one person would be overwhelmed. The website development team was comprised of four members who brought a diversity of skills and a wide range of experience to the project. The various roles were shared among the group, e.g., providing leadership in strategic planning and acting as spokesman; outlining agenda, scheduling meetings and tracking milestones; designing database tables and the hyperlink logic; programming using hypertext markup language and CGI scripting.

The ACBSP website remains, as do many locations on the World Wide Web, "under construction." The long range plan calls for the website to be ported to a server that is administered directly by ACBSP staff. It is hoped that the organization is well served by this model that is essentially reliable and flexible enough to be adapted to changing needs.

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